

F 21. (Added) An integrated circuit having a plurality of ~~a~~ isolation regions within a semiconductor substrate, each isolation region defined by:

F a trench within the substrate, the trench having a ~~characteristic profile produced~~ ^{vertical sidewall}
F ~~by an etch process~~; and

D2 F a halide-doped silicon oxide filling the trench to form an isolation element, an
F interface between the isolation element and the substrate retaining the ~~characteristic~~ ^{vertical sidewall}
F ~~profile~~ of the trench.

Sub 22. (Added) The integrated circuit of Claim 21, wherein the halide-doped silicon oxide has a dielectric constant of greater less than 3.9.

F 23. (Added) The integrated circuit of Claim 21, further comprising a barrier layer ~~halide-doped silicon oxide~~
disposed between the interface of the semiconductor substrate and the ~~dielectric material~~.

24. (Added) The integrated circuit of Claim 21, wherein the halide-doped silicon oxide comprises fluoride-doped silicon dioxide.

REMARKS

Applicants have amended Claim 11 to introduce amendments which were refused entry in the present application after a Final Rejection. Applicants have also added Claims 21-24. After entry of the amendment, Claims 11-16 and 21-24 remain pending.

Applicants submit that the claims distinguish the art of record. In particular, the Examiner had cited LOCOS references such as U.S. Patent No. 5,372,951 to Anjum et al. Applicants submit that the characteristic profile produced by thermal oxidation processes could not be confused with the trench-fill structures recited in the pending claims. For example, Claim 11 has been amended to recite "a vertical sidewall" within the semiconductor substrate. Newly

Appl. No. : 08/932,228
Filed : September 17, 1997

added independent Claim 11 recites an interface between the isolation element and substrate having a characteristic profile of an etched trench.

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance and respectfully request the same. If, however, some issue remains that the Examiner feels can be addressed by Examiner's Amendment, Applicants cordially invite the Examiner to call the undersigned for authorization.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: September 29, 2000

By: Adeel S. Akhtar
Adeel S. Akhtar
Registration No. 41,394
Attorney of Record
620 Newport Center Drive
Sixteenth Floor
Newport Beach, CA 92660
(415) 954-4114

W:\DOCS\ASA\ASA-7109.DOC
092900